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claims, as requested by the Examiner on page 2, paragraph 1, in the Office Action. The specification has been amended to add the reference numbers shown in Figs. 1 and 2. The paragraph on page 6, lines 20-27 of the specification has been copied to page 8 and reference numbers added. No new matter has been added in the amendments to the Figs. Withdrawal of the objection to the drawings is respectfully requested.

Basis for new claim 43 can be found in the present specification including at original claim 7 and page 8, lines 12 and 23 of the specification.

Claims 1 and 17 have been amended to incorporate the subject matter of dependent claim 5. The claims amended above have been amended to comply with the Examiner's request to "revise all of the claims completely." No new matter has been added.

The objection to claims 1-42 on page 2, paragraph 3 of the Office Action is obviated by the amendments set forth above. In regards to the claim terms "accumulator" and "battery," the written specification adequately defines a lead/acid battery as an example of the broader class of accumulators. The written specification also discloses that other types of accumulators, such as nickel-cadmium and nickel-iron batteries can be used. See page 1, line 5 and page 8, lines 33-34, of the published PCT application. Accordingly, withdrawal of the objection is respectfully requested.

The rejection of claim 2, 5, 7, 13-18, 20, 24-26, 33, 39, 41 and 42 under 35 U.S.C. § 112, second paragraph, on page 3, paragraph 5 of the Office Action is obviated by the amendments set forth above.

In regards to claim 17, the written specification teaches on page 8, lines 12 and 23 that the contactor 120 controls the intermittent current supply. Thus, one skilled in the art reading and comprehending the specification and claims would understand that the automatic actuator recited in original claim 17 is an example of the contactor 120. Furthermore, such a person would know from reading and comprehending page 8 of the specification that the contactor 120 can be any suitable location in the device so that it can control the current supply. Claim 17 has been amended accordingly.

Applicants submit that the language “adapted to be connected to an accumulator which is to be treated” in claim 17 is not ambiguous and accurately defines the required structure of the positive and negative clips.

In regards to claims 13 and 24, one skilled in the art reading and comprehending the specification would easily understand how the name of customer, date of treatment, accumulator manufacturer and type of accumulator are used in the claimed method and device. See page 7, lines 26-37, of the published PCT application, which teaches that the every accumulator behaves individually and depends strongly on its history. This statistical data is used to identify the history of the accumulator and determine the optimum charging characteristics.

In regards to claims 14 and 25, one skilled in the art would easily understand that “other accumulators” means accumulators other than the accumulator being treated in the method steps and “previous treatments” means previous treatments performed on the accumulator being treated in the method steps. From reading and comprehending the present specification, it is very clear that the method and device recited in claims 14 and 25 relies upon data from other treatments and/or previous treatments to the accumulator to determine what treatment should be performed.

In regards to claim 15, page 7, line 13, of the published PCT makes it very clear that many devices (charging units) can be used in the present invention, and they can be connected by a network.

In regards to claims 16 and 26, page 7, lines 13-38, describes how the “network is arranged to be used for the surveillance of the treatment process” and “the upgrading of software for the treatment process.” The numerous data taken from previous treatments performed on other accumulators and the accumulator being treated in the method are used to optimize the treatment process. This data can be upgraded into the software for each device (charging unit) to optimize the treatment of accumulators.

Applicants respectfully submit that the claimed invention fully complies with Section 112, second paragraph. Accordingly, withdrawal of the Section 112 rejection is respectfully requested.

The rejection of claims 1-7, 9-16, 27-33 and 38-42 under 35 U.S.C. § 103(a) as being unpatentable over Wihk in combination Eryou is respectfully traversed.

There is no motivation to combine Wihk with Eryou. Wihk teaches to use current supply periods of 0.5 to 10 seconds at currents of 60-75 Amps (column 4, line 51) or 90 Amps (column 4, line 30) and Eryou teaches to use constant on current across the electrodes with current pulses of 1-6 Amps (column 4, lines 50-65 and column 6, lines 48-49). These references teach in opposite directions, intermittent vs. continuous and high amperage vs. low amperage. One skilled in the art would not be motivated to combine these references. For this reason alone, the Section 103 rejection should be withdrawn.

Even if the cited references were combined, the claimed invention is not taught or suggested by such a theoretical combination.

Wihk teaches to charge in intermittent current supply periods of 0.5 to 10 seconds. One skilled in the art would not optimize Wihk to now use a period of between 0.01 to 0.5, which is outside of the range disclosed in Wihk. In order for there to be optimization, the alleged optimized range must be within the ranges taught in the prior art. Furthermore, one skilled in the art would read Wihk as teaching away from the claimed range since Wihk teaches in a direction of using longer time periods of 0.5 to 10 seconds. Since one cannot use optimization of Wihk's ranges to arrive at the claimed ranges and Wihk teaches in a direction away from the claimed ranges, the Section 103 rejection should be withdrawn for these reasons alone.

The combination of references also does not teach or suggest the step of adjusting the current level to obtain at least 2.5 volts during the supply periods in the cell. In contrast, Wihk teaches to use the acid density as a main control parameter. See column 4, line 33 and column 5 of Wihk.

The claimed current level, current supply periods and pauses provide unexpected advantages not disclosed in either of Wihk and Eryou. See page 4, line 34 through page 5, line 9, which discloses the many advantages of the present invention. For example, the short high current levels according to the present invention achieve an explode-like or chock-like effect whereby crystals present in the battery acid are disintegrated and pure lead is separated. Furthermore, using the

short intermittent current supply the total energy supplied can be relatively low thereby producing less heat, e.g. pulsing at 300 Amps can correspond to a charging current of about 20 Amps. The past history data and data garnered from other accumulators is used to optimize charge sequence for the particular accumulator being treated.

In view of the improper combination of references, the many differences between the claimed invention and the combination of references, and the many unexpected advantages of the claimed invention, withdrawal of the Section 103 rejection is respectfully requested.

The rejection of claims 17-23 under 35 U.S.C. § 103(a) over Wihk and Eryou as applied above, in combination with Gali, is respectfully traversed.

One skilled in the art would not be motivated to combine Wihk with Eryou for the reasons provided above. One skilled in the art would not be motivated to combine Gali with Wihk and Eryou, since Gali teaches a solar trickle charger in which the charge is supplied to the battery constantly with or without pulsing of the current like Eryou. For this reason alone, the Section 103 rejection should be withdrawn.

Even if the cited references were combined as alleged by the Examiner, the claimed invention would not be taught or suggested by such a theoretical combination for the following reasons.

The Examiner admits that Wihk and Eryou do not teach the claimed structure. Gali does not supply the deficiencies of Wihk and Eryou. The transistors 31A and B of Gali are not connected to the primary coil for intermittent connecting and disconnecting of the power source. Gali teaches supplying current to the battery constantly. See column 1, lines 35-57 and column 2, lines 20-35. The transistors 31A and B are used to pulse the current, not turn off and on the current. The current remains on. Thus, the combination of Wihk, Eryou and Gali does not teach or suggest the claimed invention. For this reason alone, the Section 103 rejection should be withdrawn.

The combination of references also does not teach or suggest any means for registering and measuring of process data of at least one cell of the accumulator.

The prior art only connects to the battery terminals and cannot register and measure data in an individual cell.

The combination of cited references further does not teach or suggest the unexpected advantages of the claimed invention discussed above.

In view of the improper combination of references, the many differences between the claimed invention and the combination of references, and the many unexpected advantages of the claimed invention, withdrawal of the Section 103 rejection is respectfully requested.

The following comments are in response to the Examiner's arguments on pages 7-11 regarding the claims.

In regards to the claims 2 and 18, Wihk does not disclose using temperature of the electrolyte as a process data. Column 1, lines 33-38 of Wihk cited by the Examiner refers to the prior art, not Wihk.

In regards to claim 3, Wihk does not disclose sensors being introduced into the electrolyte in each cell. Figures 1-3 of Wihk only discloses connections to the positive and negative electrodes, not to the electrolyte in the individual cells.

In regards to claims 4 and 17, the claimed current supply periods and lengths of pauses cannot be "optimized" from the cited references. Eryou and Gali both teach continuous current supply. As discussed above, Wihk teaches a supply range outside the claimed range. One cannot optimize what is not taught.

In regards to claims 5 and 21 (now recited in claims 1 and 17), none of the references teaches supplying a current until a voltage of 2.5 V is obtained. This voltage cannot be considered optimization unless the prior art teaches a range that encompasses this voltage. One cannot optimize what is not taught. Wihk teaches to use the acid density as a main control parameter, not voltage. See column 4, line 33 and column 5 of Wihk. Eryou also does not teach voltage as a process parameter. Further, Gali does not teach voltage as a process parameter. None of the cited references teaches to use voltage as a process parameter and, thus, one cannot optimize what is not taught.

In regards to claims 6, 7, 22 and 23, the cited references do not teach or suggest the claimed current ranges. Eryou and Gali teach using very low currents, which are far below the claimed amounts, as discussed above. The highest

amperage Wihk teaches is 90A (column 4, line 30). None of the references teach any amperages of at least 110, as recited in claims 6 and 22, or less than 150 as taught in claim 23. One cannot optimize what is not taught.

In regards to claims 10-12, a device is not claimed so the Examiner's reliance upon *In re Japikse*, 181 F.2d 1019 (CCPA 1950) is misplaced. The Examiner has the burden to show how the claimed method steps taught or suggested by prior art and the Examiner has not met this burden. Citation of a case relating to a device does not alleviate the Examiner's burden to provide a prima facie case of obviousness.

In regards to claim 19, Applicants respectfully submit that the Examiner's reliance upon *In re Japikse*, 181 F.2d 1019 (CCPA 1950) is misplaced, since the registering and process of data and controlling based on all or substantially all cells in the accumulator defines the structure of the device. None of the cited references disclose measuring any data from the individual cells and, thus, they do not teach any structure capable of taking data from the individual cells.

In regards to claim 13, the criticality of collecting the data is disclosed on page 7, lines 26-38, as discussed above. The history of the accumulator to be treated as well as the history of other accumulators defines the specific treatment process in the present invention. The data cited by the Examiner on page 9 of the Office Action defines this history. None of the cited references teaches or suggests using such data.

In regards to claim 20, Eryou cannot disclose means for altering the length of the intermittent current since Eryou teaches to supply a constant on current. Wihk also does not disclose a control unit varying the current supply periods during the treatment process.

In regards to claim 38, none of the cited references teaches registering of process data at the startup of the treatment. One cannot optimize what is not taught.

For all of these reasons, Applicants submit that the claimed invention is not taught or suggested by the cited references and all prior art rejections should be withdrawn.

The rejection of claims 8 and 34-37 under 35 U.S.C. § 103(a) over Wihk and Eryou as applied above, in combination with Gali, is respectfully traversed.

One skilled in the art would not be motivated to combine Wihk with Eryou for the reasons provided above. One skilled in the art would not be motivated to combine Gali with Wihk and Eryou, since Gali teaches a solar trickle charger in which the charge is supplied to the battery constantly with or without pulsing of the current like Eryou. For this reason alone, the Section 103 rejection should be withdrawn.

Even if the cited references were combined as alleged by the Examiner, the claimed invention would not be taught or suggested by such a theoretical combination for the following reasons.

None of the cited references teach a method according to the present invention which includes a regeneration part and a charge part. One cannot optimize what is not taught.

Accordingly, withdrawal of the Section 103 rejection is respectfully requested.


The Examiner's conclusory statement on page 11 of the Office Action that "[w]ith respect to the method claims 1-42: the method steps will be met during the normal operation of the apparatus described above," is without merit. Clearly, the apparatus of Eryou and Gali teach to use a continuous on current and, thus, cannot teach the method steps of 1-42. Furthermore, the apparatus of Wihk is also very different from the present invention as discussed fully above in reference to the method steps taught by Wihk. The Examiner has not shown how any apparatus meets the present method steps recited in claims 1-42 and for this reason alone this statement should be withdrawn.

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In view of all of the rejections of record having been addressed, Applicants submit that the present invention is in condition for allowance and Notice to that effect is respectfully requested.

Respectfully submitted,
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